What I claim as my invention is:

- 1) In a warm blood animal, the method of single or multiple inhalation treatments employing Xenon-133 at millicurie concentrations and for a duration to expose the blood, lymph and body water and other organs and infected tissues of AIDS patients to absorbed radiation doses ranging from 0.1-10.0 rads, more preferably from about 0.1-2.0 rads, such radiatons being targeted primarily to the suppressor T cells and to the enhancement of natural body defense systems (INF-gamma, Le2, P53) and Natural Killer cells resulting in a decrease in circulating HIV virus particles (HIV-1, HIV-2, HTLV), therein providing a temporary relief from or permanent cure of the disease, and wherein the inhaled xenon-133 is admixed into a carrier gas formulation consisting of 20-95% oxygen, and optionally 0.1-10% Xenon-131, and with any remainder being air or nitrogen.
- 2) The claim as in 1, wherein the diseases treated are human leukemias.
- 3) In a warm blooded animal, the method of single or multiple inhalation treatments employing Xenon-133 at millicurie concentrations and for a duration to expose the blood, lymph, body water and other infected organs and tissues to absorbed radiation doses from 10-50 rads, such radiation being directed at viral or sub-viral DNA particles in viral, prion, or bacterial infections to effect a amelioration, reversal or cure of said infectious conditions.